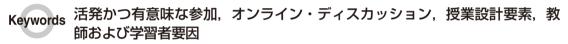# 有意味で活発なオンライン・ディスカッションを促す要因：授業設計要素，教師および学習者要因の観点から
Instructional Design and Teachers and Learners Factors Affecting Active and Meaningful Participation in Online Discussion

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ABSTRACT

　カリキュラムの中にオンライン・ディスカッションが組み込まれるにしたがって，オンライン・ディスカッションへの参加が活発で意味のあるものとなるための要因に関心が集まり，その要因を明らかにすることが緊急の課題となっている．そこで，本研究では（1）オンライン・ディスカッションにおける，活発で意味のある参加とはどのようなものか，（2）どのような授業設計要素と教師および学習者要因がオンライン・ディスカッションにおける活発で意味ある参加を促すか，という2点を課題として文献調査を行い，先行研究を展望する．これは，オンライン・ディスカッションおよびオンライン・ラーニングのための授業設計にあたって，理論的・概念的基礎を提供するものである．

　As more and more learning institutions include online discussion in their curriculum, it is therefore imperative to understand what constituents an active and meaningful participation in online discussion. In view of this, the study aims to explore the following questions: (1) what is active and meaningful participation in online discussion and (2) what are the instructional design and teachers and students factors that affect active and meaningful participation in online discussion? The study will be based on review of literature and related

studies. It aims to provide new knowledge and understanding that could serve as theoretical and conceptual basis in designing instruction for online discussion and consequently for online learning.

"Such happiness as life is capable of comes from the full participation of all our powers in the endeavor to wrest from each changing situations of experience its own full and unique meaning."

John Dewey

1. Introduction

The technology of today creates a platform for social networking that allows people to communicate and learn. Online communication has become the staple of everyday life. In the field of education, online discussion becomes a critical part of online learning that offers a premise of open and free discussion mostly facilitated by instructors. Internet forum, message board, online conference, and others either done in synchronous/asynchronous mode have been associated with the term.

Online courses can stimulate active learning through discussion (Hamann et al, 2006). Moreover, Zhu (2005) suggested that online discussion can engage students in either lower or higher level of cognitive engagement during asynchronous online discussion. Additionally, Hara et al. (2000) theorizes that electronic conferencing may have been a tool to restructure student cognitive representations of the information and foster student knowledge gains. Furthermore, not only metacognition components of electronic discussions influence the level of information processing, it could lead to student internalization of the skills and strategies to which they are exposed on social or inter-psychological plane (Vygotsky, 1978).

However, there remains little understanding regarding the factors that affect online discussion. Instructors sometimes find it difficult to facilitate class discussion online because there remains scant knowledge about interaction and student cognitive engagements in asynchronous online discussion (Zhu, 2005). Moreover, Hara et al. (2000) suggested that future studies should assess cognitive gains resulting from online discussion and additional research on student skills gained in electronic conferencing settings.

Thus, the study aims to define active and meaningful participation in online discussion. Moreover, the study identifies two factors (instructional design and teachers and learners) that affect online discussion. Furthermore, it aspires to present a micro analysis of online discussion through the researcher's experiences, challenges of conducting an online discussion and an overview of online discussion in a liberal educational institution. Additionally, it aims to provide practical data and insights as basis for designing, developing, implementing, maintaining and evaluating online discussions. All discussions will be based on review of literature and related studies.

2. Definition: Active and Meaningful Participation in Online Discussion

Essentially, online discussion can promote active learning, involving students in doing things and thinking about the things they are doing (Bonwell & Eison, 1991). Active and meaningful participation can be defined as an active involvement by the

learner and a range of instructional activities and technologies (Bannan-Ritland, 2002). Therefore, active and meaningful participation in online discussion can be described as an active involvement and participation of human, technology and activities in discussion in an online setting to promote learning.

The end goal of all academic pursuits is learning and online discussion is no exemption. If learning in this process can be defined by an active and meaningful participation, how do we measure it? Leeming and Michael (2005) outline three distinct criteria to quantify and qualify the term:

- Basic Protocols & Conventions
  - Minimum number of postings
    Responding to classmates' comments and questions
  - Length of the post
  - Timing of posting
  - Spelling/grammar

- Quality
  - Address every point in the question
  - For critiques/peer reviews, student should have looked at others' work carefully, providing detailed, thoughtful feedback
  - Depth of response integration with others' and own experiences
  - Original thought, contributes new ideas
    Asks relevant question

- Giving Feedback
  - Regular feedback important for learning
  - Methods for communicating and feedback
  - Grading tools

Although the first criteria can be surmised as too technical and mechanical, it provides an undeniable proof of the quantified active and meaningful participation that takes place during online discussion. The frequent, lengthy and prompt response to a post or query is an indication of the eagerness of the participants. Moreover, it is hard to expect perfect grammar therefore a post that is clear enough to express ideas is acceptable. It should be noted that the second criteria is more important that the first. The concern is the quality of the posting by discerning whether the participants use higher cognitive levels that promote learning. The third criteria can be applied to teachers and students, as they are both participants in the online discussion. They can provide important feedback and assessment for learning through defined methods of communications.

Moreover, Klemm (2002) presented eight ways to get students more engaged in online conferences: (1) require participation -- don't let it be optional; (2) form learning teams; (3) make the activity interesting; (4) don't settle for just opinions; (5) structure the activity; (6) require a "*hand-in assignment*" (deliverable); (7) know what you are looking for and involve yourself to help make it happen; and (8) peer grading.

However, it is also noteworthy that the participation of students is often tied into assessment (Kirkwood & Price, 2005). If this is the norm, the question that begs to be asked is, if participation is required as it is tied up with grades, how can you say that there is an active and meaningful participation in online discussion? The answer is simple; the criteria go beyond the protocols and conventions. As stated above, quality is more important than quantity. Moreover, most online discussion requires a "*project*" either individually or as a collaborative group which can also provide valuable evidences that active and meaningful participation has taken place.

At International Christian University (ICU), a liberal educational university in Japan, the Educational Media and Society (EMS) is the leading division in including online discussions in its courses. These online discussions provide a wealth of tools for consultation, dialogue, negotiation, and taking actions as well as a record of the impact of change. These changes can be observed in the shift of perceptions and behaviors of participants not only about online discussion but as well as the whole concept of online learning. Most of the participants of EMS online discussion reported good experiences and are willing to go through the same experience again. Moreover, the transcript of discussion and subsequently the "*project*" they produce are rich in evidences of active and meaningful participation and individual, collaborative and cooperative learning.

The online discussion in EMS classes at ICU is hotbed for mapping active and meaningful participation. Mostly done in grouping settings, transcript analysis of one of the classes reveal that most of the participants are more likely to exchange ideas and collaborate in the fulfillment of the task at hand. Likewise, most participants have initiated their own discussion threads with eager, prompt and lengthy reply from most of the other members of the group. Moreover, the use of eticomotions, capital and bold letters, and elongated words (i.e. rrrrreeeeeaaaaallllllyyyyy) to assert their individuality are very evident. Furthermore, most participants will likely to reply promptly in an instructors post and the instructors' messages are full of positive feedback and reinforcements.

3. Factors that Affect Active and Meaningful Participation in Online Discussion

The rubric developed by Van Duzer (2004) for designing instruction for an active and meaningful

online discussion outlines the following: (1) learner support and resources; (2) discussion organization and design; (3) instructional design and delivery; (4) assessment and evaluation; and (5) innovative teaching technology. However, for the purpose of the study, they are categorized into two: instructional design factor and the teachers and learners factor. In addition, the two factors are subdivided into categories for detailed discussion and further analysis anchored in other literature and studies.

3.1 Instructional Design Factors

Designing instruction for an efficient and effective online discussion to affect active and meaningful participation is oftentimes a challenging task. How to conduct online discussion, what part of the course goes online, the organization of learners, content, resources and so may other things are questions that require an expert answer.

3.1.1 Online Interaction

The most critical factor in online discussion is interaction. It is the measure in which the success or failure of the process is based. Online discussion is a computer mediated communication (CMC) social structure that can be designed to provide online interpersonal and intrapersonal interaction. When CMC link people, institutions, and knowledge, they are computer-supported networks (Wellman & Hiltz, 2004) which can reveal relationships and interaction. It is crucial that the design of online discussion permits maximum active and meaningful participation to affect learning.

Some that may argue that online discussion limits the expression of emotions (Alpay, 2005) however, there are distinct socio-emotional dimensions to all channels of communications (Tanner, 2005) and that online interaction is no exception (Rovai, 2002; Seepersad, 2004; Walther, 1992). The interaction that takes place in online discussion can be deeply

personal and relational as in the traditional face-to-face classroom.

It is also important that the design of the online discussion encourages participants to interact with one another. Interpersonal interaction must be planned, that is, designed upfront, or it is unlikely to occur (Kearsley, 1995). Literature review done by Flottemetch (2000) reveals that high interpersonal interaction is associated with: (1) increased motivation, (2) more positive attitudes toward learning, (3) higher satisfaction with instruction, (4) confidence in learning capabilities, development of critical thinking and problem solving skills, (5) deeper and more meaningful learning in general, and (6) higher achievement.

To promote effective interactions and dialogue exchanges, Sherry et al (2001) recommends the following: (1) a mix of probes and supportive comments helps to extend conversations; (2) positive criticism through supportive comments work best; and (3) critiques that address specific features of a participant's request for feedback are taken seriously. Moreover, Ambrose (2001) stresses the importance of providing a safe environment for participation in online communications and activities. Furthermore, the degeneration of meaningful dialogue into less purposeful discussion can be controlled through moderator/mentor interventions (Sherry et al, 2001; Ambrose, 2001; Salomon, 2000).

3.1.2 What part of the course goes in an online discussion?

The ultimate goals of effective design of online teaching programs from a teaching perspective should be to facilitate learning, and "*meaning making*" (Salomon, 2000), and to meet the academic, social and pragmatic needs of learners (Kempe et al, 2001). The goals and objectives of the discussion forum should be to facilitate higher cognitive engagements through a series of processes that meet the learners' needs. This means that the instructor can choose any particular part of the course for online discussion however, one aim is to ensure that it was not just an "*add on*", but an integral part of the learning environment. Moreover, well-thought and well defined support systems (availability of resources, human support, etc) are also critical in the success of an online discussion initiative.

In the EMS courses, it is usually within the discretion of the instructors what part of the course is to be implemented in online discussion. It is more often that not, an informed decision in terms of content expertise, use of technology and the availability of resources. Moreover, for novice instructors, I recommend the following: (1) ask the experts; (2) choose a topic that would stimulate the curiosity of the participants; (3) look for the supplemental resources; and (4) identify support systems.

3.1.3 Collaborative and Cooperative Learning

The use of online discussion groups offers a relatively new avenue through which the learner can take an active role in the learning process (Larkin-Hein, 2001). Learning takes anytime and anywhere with the consolidation of different platforms. It gives the students time to think and compose a question or make a comment. This mode of communication is also conducive for self-expression and group learning. It also provided a forum for the expression of socio-emotional dimensions (Rovai, 2002; Seepersad, 2004; Walther, 1992) as well as collaborative and cooperative learning (Kaye, 1991; Klemm, 1995; McComb, 1993).

In a quasi experiment conducted in one of the EMS courses using online interaction, the following hypothesis can be derived: (1) students are more

engaged in online discussion when they are within a group; (2) grouping strategies (homogeneous / heterogeneous) have the same level of interaction; (3) grouping provides the venue for collaborative and cooperative learning; and (4) online grouping are at times supplemented by face-to-face meetings.

3.1.4 Learning Outcomes
3.1.4.1 Cognitive Engagements

Online discussion should also be designed to facilitate high levels of cognitive engagements. Cognitive engagement is usually described as a personality dimension which influences attitudes, values, and social interaction (Manzano & Kendall, 2007). In other words, it is the actual or perceived learning that takes place in an online discussion. Cognitive engagements can't be observed online, however, it is discernible from discussion messages (Zhu, 2005). Discussions transcripts and summary could be critical basis in determining the levels of learning. Moreover, there are numerous ways in which this transcript analysis can be done, notably the Analytical Framework for Cognitive Engagement in Discussion, a scheme that incorporates the coding system ''Note Categories and Interaction Types'' (Zhu, 1998,), and the theoretical framework of content analysis (Henri, 1992).

In a study conducted in one of the EMS courses using asynchronous online discussion revealed that most of the participants have utilized higher cognitive levels specifically metacognition and retrieval and comprehension as the least being used. The students readily engaged in interaction using their higher cognitive levels proving Blooms (1956) hypothesis that learners don't have to go through all the levels sequentially. Moreover, online discussion can encourage higher level of engagements by the use of careful and well thought moderating techniques.

3.1.4.2 Satisfaction

Wu and Hiltz (2004) believe that students enjoy more when their online discussion class is student-dominated. In view of this, EMS online discussions are learner-centered and the role of instructors, are that of facilitator/moderators. Although basic rules are laid out, the quantity and quality of postings and projects of the students evidently reinforce this belief. Most participants including novice learners report an overwhelming positive feedback.

3.1.5 Institutional Support

The main concern of any institution is the cost effective of the online learning thereby affecting the implementation of online discussion within the framework that is allowable. Some of the factors to be considered in terms of resources allocation are: (1) time (Hartman et al., 1999), (2) technological skills (Levine & Wake, 2000; Morgan, 2002), and (3) changing organizational culture (Hartman et al., 1999). There is also a need to provide professional development for instructors that will be teaching online and face-to-face (Lindquist, 2006). The institutional support is concerned with issues of administrative affairs, academic affairs and other related student services.

At ICU, it is an institutional decision to implement blending learning thereby paving the way for more courses to include online discussion. The abundant resources (computers, books, etc) and the support system (help desk) it provides make it easier for teachers and students to participate in an online discussion.

3.2 Teachers and Learners Factors

In an online discussion, the teachers are primarily the content expert and more often than not take the role of the instructional designer as well. Students are the primary participants and the intended beneficiary of the online discussion. Both their

diversity and the roles they take are important factors for consideration.

3.2.1 Diversity

The skills and previous knowledge that the teachers and students brought to the online discussion determine the kind of participation and learning that will take place. They contribute to the self efficacy, perception, attitudes and motivation of both the teachers and students.

For instance, it is not only the students that need to be convinced of the need and benefits of online learning, teachers should have positive attitudes which is critical for a successful online teaching (Kempe, 2001). Moreover, instructors' participation can influence the individual levels of cognitive engagement as well as intrinsic motivation (Corno & Mandarich, 1983). Furthermore, there are different perceptions between teachers and students on what kind of role each has to play in an online discussion. Kempe (2001), Salomon (2000) and Ambrose (2001) suggest that teachers undertake an online course themselves and experience what it's like from a student perspective. Additionally, the teachers preparation that includes the design, maintenance, and evaluation in regards to online discussion are important.

With teachers and students coming from the international community, the set of skills and previous knowledge of ICU population is one of the most diverse in Japan. It includes novices and experts in regards with online learning both from the faculty rank and the student population. It is a constant challenge to create a learning community that balances these factors. One concrete example is that the EMS courses constituent a large percentage of classes that employ blended learning that includes online discussions due to the nature of the courses and the expertise of its faculty members.

The student diversity in terms of digital divide, cultural imprints and socio-demographic profile could have crippling effects in an online discussion. ICU tries to maintain a learning environment that could accommodate its diverse students. All students are treated equal and given equal opportunities for learning. The EMS online discussions accommodate all levels of learners with a multi-cultural and multi-lingual background. Due to this fact, although English is the medium of instruction, students are encouraged to express themselves in the language they are most comfortable with. In terms of gender equality, it is taken into account Wu & Hiltz (2004) findings that there are no significant differences in online discussions.

3.2.1 Online Roles
3.2.1.1 Teachers Online Role

Berge (1995) advocates that online instructor should elicit the creation of knowledge within students (student-centered) by drawing out students opinions, knowledge, and problem solving abilities; facilitating interaction; and enabling students to learn and develop by self-discovery and personal insights. The most preferred role of online instructors is that of moderator/facilitator. Bodies of research have concluded similarly and provided different aspects and perspectives of facilitation:

- Organizational, social and intellectual categories of facilitation (Paulsen, 1995).

- Facilitators are to guide on the side, instructor or project leader, and group process facilitator (Collison et al, 2000).

- It requires a unique facilitation style different from face-to-face setting (Ambrose, 2001).

- It requires special skills by the facilitator (Sherry et al, 2001; Collison et al, 2000).

- Facilitation skills can be learnt (Collison et al, 2000).

The role of a teacher in an online discussion is both as the content expert and that of a co-learner. The secret to expert facilitation is creating this delicate balance. However, Collison et al (2000) argue that the facilitator, can be, but is not always, the developer of online learning content, and does not necessarily have to be the content expert either. I fully agree that the instructional designer sometimes is not the content expert but the role of facilitators are of great importance and being content expert should be one of their qualifications. Even if the facilitator possess the technological expertise, the content in which the online discussion will evolve should be facilitated by a content expert. This argument is taken in the context that the facilitator and the content expert is one and the same entity. Of course, if the facilitator is aided by a content expert all throughout posting the discussions, then I rest my case. However, this scenario involves wasting precious human resources.

3.2.1.2   Students Online Role

Garrison et al (2004) argue that the role assumed by the online learner is one of both independence and interdependence. Since online discussion is often an extension of the face-to-face classroom, participants are interdependent with one another. However, the end goal is to promote independence thereby facilitating higher cognitive skills. Moreover, there is an adjustment to online learners that goes well beyond the technical skill and technologically equip participants are often the first to developed independency (Garrison et al, 2004).

Moreover, for novice participants, this is an entirely new experience without the visual cues afforded in a face-to-face classroom setting. Although most of them are reluctant participants at first, however, it doesn't deter them experiencing online discussion to the fullest extent. Shy students are able to fully participate, online leadership is recognized and congruency of learner diversities, are common findings in online discussions.

4.   Online Discussion at ICU

An overview of the online discussion at ICU offers an insight about most if not all of the factors mentioned above:

- The institution provides the necessary support for online learning thereby, it is easier for teachers to conduct as well as students to participate in online discussion. The design, delivery and organization of the online discourse are dependent on the instructional designer usually the teacher of the course. For novice teachers, a support system is being provided.

- The goals and objectives of the online discussion are often discussed using face-to-face classes to provide a more personal venue for clarification. Ground rules and regulations are given (i.e. the teachers expectations for posting, letting the students know that the teacher is not expected to comment on every posting are given, etc.).

- The role of the teacher is often as a facilitator, posting open ended questions and discussion topics, having students interact with themselves (actually within their group), and only interjecting to keep the discussion on track or address issues that needs clarifications.

- Assessment is often done at the end of the online discussion by giving grade for participation, group work and self reflection essay. There is an overwhelming positive response about the

advantages of online discussion.

- The online discussion engage, guide and motivate learners and provide a safe and conducive environment for learning and communication exchange for all learners regardless of their prior experience and predisposition towards online learning technologies.

- The online discussion transcript offers new understanding and knowledge about how learners learn online thereby providing raw data for future initiatives.

5. Challenges of Online Discussions

Online discussion like any other educational initiatives encounters some challenges. However, these drawbacks are minor inconveniences that can be overcome and relatively insignificant compared with the benefits that can be derived in using online discussion:

- Avoiding the dangers of misinterpretation of text (and assisting students to do the same) (Sherry et al., 2001).

- Dealing with silences and getting students to actively participate (Benfield, 2000).

- Finding the right voice for communicating and responding (Collison et al, 2000).

- Finding the optimal balance between private email and public discussion (Collison et al, 2000).

- Teacher workload in responding to individual students' online (Sherry et al, 2001).

- The differences of perception toward online learning between instructors and learners (Trinidad et al, 2005).

Through years of experiences with online discussion both as a student and as a facilitator, the researcher finds some other concerns: (1) students are overwhelmed with the amount of posting; (2) the dominance of expert students and inferiority of novice learners, (3) the quantity and quality of messages; and (4) the length of time of online discussion.

6. Conclusion

The primary goal of instructional design is fully engage diverse students with a wide variety of individual, group and technological factors that affect active and meaningful participation in an online discussion to facilitate learning. Moreover, the satisfaction of learners, more importantly novice students is also paramount in instructional design.

The role of a facilitator/moderator seems to be the most suited for teachers while students play the role of an active participant. Although, there are wide varieties of teachers in most universities, they are all considered content experts in their field. This concrete standard makes it possible for instructional designer to concentrate more on the diversity of learners. This doesn't mean that teachers' satisfaction is not important but as experts in the field, they can cultivate their own understanding of the process thereby increasing their satisfaction overtime.

Online discussion offers a new teaching experience for teachers and a new learning experience for students. The experience prepares them in terms of technology integration in education and acceptance of the diversity of participants. As they move forward from being a novice to that of

an expert, participation becomes more active and meaningful, skills are developed, and learning is increased. Furthermore, as learning institutions continue to value the benefits of online discussion, there is also a proportional increment in the support it provides.

The research recommends further studies in online discussion. The timeframe in which it should be implemented is one of the unexplored areas. In addition, online discussion using mobile and ubiquitous technologies is an interesting scenario that requires additional if not initial understanding. Furthermore, a compilation of best practices that will serve as a blueprint for online discussion is in order.

Finally, as Jhon Dewey said, every individual should be able to connect as a powerful participant in any endeavor, prevail against odds and form his own reality about that experience. Online discussion provides an opportunity for every learner to experience the learning process in a virtual world with multifarious participants, triumph and promulgate his own relative truth. And as a teacher and a student, I hope that truth is something good.

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